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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

FEE TRANSMITTAL for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

☒ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$) 0.00

Complete if Known

Application Number	10/620,520
Filing Date	07/16/2003
First Named Inventor	Adrien R. Beaudoin
Examiner Name	
Art Unit	1623
Attorney Docket No.	850865.90015

METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

☒ Deposit Account:

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Quarles & Brady LLP

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FEE CALCULATION

1. BASIC FILING FEE

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1001	770	2001	385	Utility filing fee	
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	
SUBTOTAL (1)					(\$) 0.00

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

		Extra Claims		Fee from below		Fee Paid
Total Claims	<input type="text"/>	-20*	=	<input type="text"/>	X	<input type="text" value="0.00"/>
Independent Claims	<input type="text"/>	-3**	=	<input type="text"/>	X	<input type="text" value="0.00"/>
Multiple Dependent				<input type="text"/>		<input type="text"/>

Large Entity		Small Entity		Fee Description
Fee Code	Fee (\$)	Fee Code	Fee (\$)	
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple dependent claim, if not paid
1204	86	2204	43	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) (\$) 0.00

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Small Entity

Fee Code	Fee (\$)	Fee Code	Fee (\$)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for ex parte reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify)

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$) 0.00

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(Complete (if applicable))

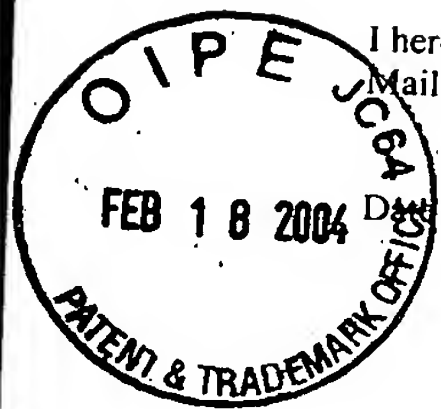
Name (Print/Type)	Nicholas J. Seay	Registration No. (Attorney/Agent)	27,386	Telephone	608/251-5000
Signature		Date	Feb 9, 2004		

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This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

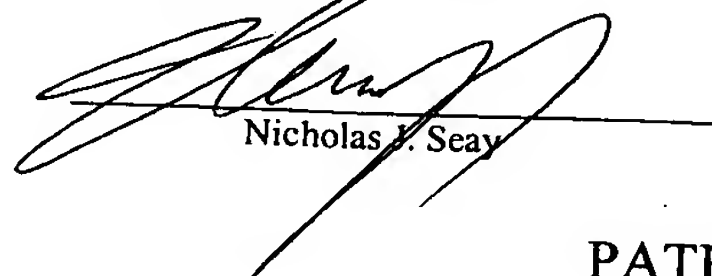
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Date of Signature and Deposit: Feb 9, 2004


Nicholas J. Seay

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Adrien R. Beaudoin
Fernand-Pierre Gendron
Efrat Halbfinger
Bilha Fischer

Date: Feb 9, 2004

Serial No.: 10/620,520

Group Art Unit: 1623

Filed: 07/16/2003

Examiner:

For: C8-SUBSTITUTED PURINE NUCLEOTIDE
ANALOGS AND THEIR USE AS INHIBITORS OF
NUCLEOSIDE TRIPHOSPHATE DIPHOSPHOHYDROLASES

File No.: 850865.90015

INFORMATION DISCLOSURE STATEMENT

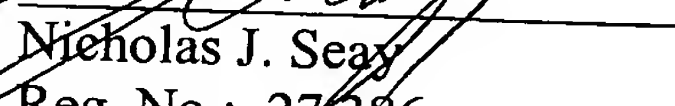
Commissioner for Patents
P O Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Enclosed is a completed Form PTO-1449 listing documents that the applicants in the above-identified application wish to bring to the attention of the Examiner for consideration in connection with the examination on the merits of this application.

No fee is believed due, but should a fee be due please charge the fee to Deposit Account No. 17-0055.

Respectfully submitted,


Nicholas J. Seay
Reg. No.: 27,386
Attorney for Applicants
QUARLES & BRADY LLP
P.O. Box 2113
Madison, WI 53701

TEL 608/251-5000
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<div>INFORMATION DISCLOSURE CITATION <i>(Use several sheets if necessary)</i></div> <div></div>				Docket Number (Optional) 850865.90015		Application Number 10/620,520		
				Applicant(s) BEAUDOIN, A.L. et al.				
				Filing Date July 16, 2003		Group Art Unit		
U.S. PATENT DOCUMENTS								
*EXAMINER INITIAL	REF	PATENT DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
	1.	U.S. 6,312,662 B1	11/06/2001	Erion et al.				
FOREIGN PATENT DOCUMENTS								
	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation YES NO	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)								
	2.	Burnstock, G., Campbell, G., Bennett, M., and Holman, M.E. Innervation of the Guinea-Pig Taenia Coli: are there intrinsic inhibitory nerves which are distinct from sympathetic nerves? Int. J. Neuropharmacol 3: 163-166, 1964.						
	3.	Burnstock, G. Evolution of the autonomic innervation of visceral and cardiovascular systems in vertebrates. Pharmacol. Rev. 21 (4): 247-324, 1969.						
EXAMINER				DATE CONSIDERED				
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.								

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		July 16, 2003	

*EXAMINER INITIAL	OTHER DOCUMENTS	(Including Author, Title, Date, Pertinent Pages, Etc.)
	4.	Su, C., Bevan, J.A. and Burnstock, G. [3H] adenosine triphosphate: release during stimulation of enteric nerves. Science 173(994): 336-338, 1971.
	5.	Langer, S.Z., and Pinto, J.E.B. Possible involvement of a transmitter different from norepinephrine in the residual responses to nerves stimulation of the cat nictitating membrane after pretreatment with reserpine. J. Pharmacol. Exp. Ther. 196(3): 697-713, 1976.
	6.	Burnstock, G. Purinergic receptor. J. Theor. Biol. 62 (2): 491-503, 1976.
	7.	Von Kugelsen, I., and Starke, K. Noradrenaline-ATP co-transmission in the sympathetic nervous system. Trends Pharmacol. Sci. 12(9): 319-324, 1991.
	8.	Westfall, D.P., Sedaa, K.O., Shinozuka, K., Bjur, R.A., and Buxton, I.L.O. ATP as a Cotransmitter Ann. NY Acad. Sci. 603: 300-310, 1990.
	9.	Burnstock, G. Neural nomenclature. Nature 229(5282): 282-283, 1971.
	10.	Burnstock, G. A basis for distinguishing two types of purinergic receptors. In: Cell membrane receptors for drugs and hormones: A multidisciplinary approach. (Eds. R.W. Straub and L. Bolis), Raven press, New York. Pp. 107-118, 1978.
	11.	Fredholm, B.B., Abbracchio, M.P., Burnstock, G., Daly, J.W., Harden, T.K., Jacobson, K.A., Leff, P., and Williams, M. Nomenclature and classification of purinoceptors. Pharmacol. Rev. 46(2): 143-156, 1994.
	12.	Gendron et al. ATP diphosphohydrolase inhibitors: novel perspectives. Poster Abstract, p. 327 from conference Ecto-ATPases and Related Ectonucleotidases (June 1999).
	13.	Juul, B., Plesner, L., and Aalkjaer, C. Effects of ATP and related nucleotides on the tone of isolated rat mesenteric resistance arteries. J. Pharmacol. Exp. Therap. 264: 1234-1240, 1993.
	14.	Motte, S., Communi, D., Piroton, S., Boeynaems, J.M. Involvement of multiple receptors in the actions of extracellular ATP: the examples of vascular endothelial cells. Int. J. Biochem. Cell Biol. 27: 1-7, 1995.
	15.	Rongen, G.A., Floras, J.S., Lender, J.W.M., Thien, T., and Smits, P. Cardiovascular pharmacology of purines. Clin. Sci. 92: 13-24, 1997.

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	16.	Dubyak, G.R., and El-Moatassim, C. Signal transduction via P2-purinerger receptors for extracellular ATP and other nucleotides. Am. J. Physiol. 265: C577-C606, 1993.
	17.	Johnson, C.R., and Hourahi, S.M.O. Contractile effects of uridine 5'-triphosphate in the rat duodenum. Br. J. Pharmacol. 113(4): 1191-1196, 1994.
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	19.	Strohmeier, G.R., Reppert, S.M., Lencer, W.I., and Madana, J.L. The A2b adenosine receptor mediated cAMP responses to adenosine receptor agonists in human intestinal epithelia. J. Biol. Chem. 270(5): 2387-2394, 1995.
	20.	Hancock, D.L., and Coupar, I.M. Functional characterization of the adenosine receptor mediating inhibition of peristalsis in the rat jejunum. Br. J. Pharmacol 115(5): 739-744, 1995.
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	22.	Baricordi, O.R., Ferrari, D., Melchiorri, L., Chiozzi, P., Hanau, S., Chiari, E., Rubini, M., and Di Virgilio, F. An ATP-activated channel is involved in mitogenic stimulation of human T lymphocytes. Blood 87(2): 682-690, 1996.
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	24.	Ventura, M.A., and Thomopoulos, P. ADP and ATP activate distinct signaling pathways in human promonocytic U-937 cells differentiated with 1,25-dihydroxy-vitamin D3. Mol. Pharmacol 47: 104-114, 1995.
	25.	Biffen, M., and Alexander, D.R. Mobilization of intracellular Ca ²⁺ by adenine nucleotides in human T-leukaemia cells: evidence for ADP-specific and P2y-purinerger receptors. Biochem. J. 304:769-774, 1994.
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		July 16, 2003	

*EXAMINER INITIAL	OTHER DOCUMENTS	(Including Author, Title, Date, Pertinent Pages, Etc.)
	28.	Dunwiddie, T.V., Abbracchio, M.P., Bischofberger, N., Brundage, J.M., Buell, G., Collo, G., Corsi, C., Diao, L., Kawashima, E., Jacobson, K.A., Latini, S., Lin, R.C.S., North, R.A., Pazzagli, M., Pedata, F., Pepeu, G.C., Proctor, W.R., Rassendren, F., Surprenant, A., and Cattabeni, F. Purinoceptors in the central nervous system. <i>Drug Dev. Res.</i> 39(3-4): 361-370, 1996.
	29.	Burnstock, G., and Wood, J.N. Purinergic receptors: Their role in nociception and primary afferent neurotransmission. <i>Curr. Opinion in Neurobiol.</i> 6(4): 526-532, 1996.
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	31.	Beaudoin, A.R., Sévigny, J., and Picher, M. ATP diphosphohydrolases, apyrases and nucleotide phosphohydrolases: biochemical properties and functions. In: <i>Biomembrane</i> , vol. 5; Lee, A.G., Ed.; Greenwich, CT: JAI, pp. 369-401, 1996.
	32.	P. 1072 Sigma-Aldrich catalogue "Bioactive Peptides".
	33.	Beaudoin, A.R., Grondin, G., Enjyoji, K., Robson, S.C., Sévigny, J., Fischer, B., and Gendron, F.-P. Physiological role of NTPDases (ATP diphosphohydrolases) in mammals. <i>Proceeding of the 2nd International Workshop on ecto-ATPase and related nucleotidases</i> . Diepenbeek, Belgium, 14-18 June 1999. Vanduffel L., and Lemmens R., Eds. Shaker Publishing B.V., The Netherlands; pp. 125-135, 2000.
	34.	Plesner, L. Ecto-ATPases: identities and functions. <i>Int. Rev. Cytol.</i> 158: 141-214, 1995.
	35.	Vlajkovic, S.M., Thorne, P.R., Hously, G.D., Munoz, D.J.B., and Kendrick, I.S. Ecto-nucleotidases terminate purinergic signalling in the cochlear endolymphatic compartment. <i>Neuroreport</i> 9: 1559-1565, 1998.
	36.	Zimmermann, H. 5'-Nucleotidase: molecular structure and functional aspects. <i>Biochem. J.</i> 285: 345-365, 1992.
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	38.	Côté, Y.P., Pavate C.T. and Beaudoin A.R. The control of nucleotides in blood vessels: Role of the ATP diphosphohydrolase (Apyrase). <i>Curr. Top. Pharmacol.</i> 1:83-92, 1992.
	39.	Sévigny J., Levesque F.P., Grondin G. and Beaudoin A.R. Purification of the blood vessel ATP diphosphohydrolase, identification and localization by immunological techniques. <i>Biochim. Biophys. Acta</i> 1334: 73-88, 1997.

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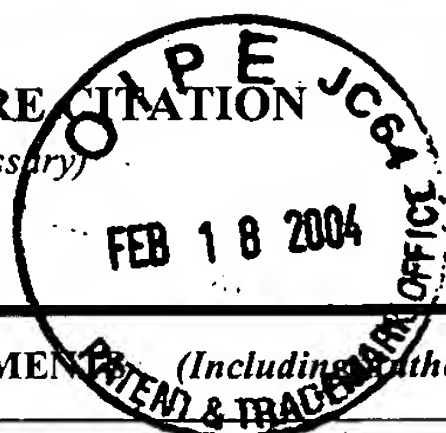
*EXAMINER INITIAL	OTHER DOCUMENTS	(Including Author, Title, Date, Pertinent Pages, Etc.)
	40.	LeBel D., Poirier G.G., Phaneuf, S., St-Jean P., Laliberté J.-F. and Beaudoin A.R. Characterization and purification of a calcium sensitive ATP diphosphohydrolase from the pig pancreas. J. Biol. Chem. 255: 1227-1233, 1980.
	41.	Sévigny, J., Côté, Y.P. and Beaudoin, A.R. Purification of pancreas type I ATP diphosphohydrolase and identification by affinity labelling with 5'-p-fluorosulfonylbenzoyl-adenosine ATP analog. Biochem J. 312: 351-356, 1995.
	42.	Christoforidis, S., Papamarcaki, T., Galaris, D., Kellner, R. and Tsolas, O. Purification and properties of human placental ATP diphosphohydrolase. Eur. J. Biochem. 234: 66-74, 1995.
	43.	Kaczmarek, E., Koziack, K., Sévigny, J., Siegel, J.B., Anrather, J., Beaudoin, A.R., Back, F.H., Robson, S.C. Identification and characterization of CD39/vascular ATP diphosphohydrolase. J. Biol. Chem. 271: 33116-33122, 1996.
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	46.	Barcellos, C.K., Schetinger M.R.C., Battastini A.M.O., Silva L.B., Dias R.D., Sarkis J.J.F. Inhibitory effect of cadmium acetate on synaptosomal ATP diphosphohydrolase (EC 3.6.1.5; apyrase) from adult rat cerebral cortex. Braz. J. Med and Biol. Res. 27(5): 1111-1115, 1994.
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	49.	Westfall, T.D., Kennedy, C., and Sneddon, P. The ecto-ATPase inhibitors ARL 67156 enhances parasympathetic neurotransmission in the guinea-pig urinary bladder. Eur. J. Pharmacol. 329(2-3): 169-173, 1997.
	50.	Crack, B.E., Pollard, C.E., Beukers, M.W., Roberts, S.M., Hunt, S.F., Ingall, A.H., McKechnie, K.C.W., Ijzerman, A.P., and Leff, P. Pharmacological and biochemical analysis of FPL 67156, a novel, selective inhibitor of ecto-ATPase. Br. J. Pharmacol. 114(2): 475-481, 1995.
	51.	Chen, B.C., Lee, C.-M. and Lin W.-W. Inhibition of ecto-ATPase by PPADS, suramin and reactive blue in endothelial cells, C-6 glioma cells and RAW 264.7 macrophages. Br. J. Pharmacol. 119(8): 1628-1634, 1996.

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850865.90015

Application Number

10/620,520

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BEAUDOIN, A.L. et al.

Filing Date

July 16, 2003

Group Art Unit

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INITIAL

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

52.

Kennedy, C., Westfall, T.D., and Sneddon, P. Modulation of purinergic neurotransmission by ecto-ATPase. Sem. Neurosci. 8(4): 195-199, 1996.

53.

Fischer, B., Chulkin, A., Boyer, J.L., Harden, K.T., Gendron, F.-P., Beaudoin, A.R., Chapal, J., Hillaire-Buys, D., Petit, P. 2-thioether 5'-O-(1-thiotriphosphate) adenosine derivatives as new insulin secretagogues acting through P2Y-receptors. J. Med. Chem. 42: 3636-3646, 1999.

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Bültmann, R., Wittenburg, H., Pause, B., Kurz, G., Nickel, P., and Starke, K. P2-purinoceptors antagonists; III. Blockade of P2-purinoceptor subtypes and ecto-nucleotidases by compounds related to suramin. Naunyn-Schmiedeberg's Arch. Pharmacol. 354: 498-504, 1996.

55.

Tuluc, F., Bültmann, R., Glänzel, M., Wilhelm Frahm, A., and Starke, K. P2-receptor antagonists: IV. Blockade of P2 receptor subtypes and ecto-nucleotidases by compounds related to reactive blue 2. Naunyn-Schmiedeberg's Arch. Pharmacol. 357: 111-120, 1998.

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Bültmann, R., and Starke, K. Reactive red 2: a P2Y-selective purinoceptor antagonist and an inhibitor of ecto-nucleotidase. Naunyn-Schmiedeberg's Arch. Pharmacol. 352: 477-482, 1995.

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Wittenburg, H., Bültmann, R., Pause, B., Ganter, C., Kurz, G., and Starke, K. P2-purinoceptor antagonists: II. Blockade of P2-purinoceptor subtypes and ecto-nucleotidases by compounds related to Evans Blue and trypan blue. Naunyn-Schmiedeberg's Arch. Pharmacol. 354: 491-497, 1996.

58.

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